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MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2016/2017

EBI1016 – ANATOMY & PHYSIOLOGY
(BE)

7 OCTOBER 2016
9.00 am – 11.00 am
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This question paper consists of 3 printed pages including the cover page.
2. Attempt ALL FOUR questions.
3. Please write all your answers in the Answer Booklet provided

Question 1

- (a) What is meant by homeostasis? Provide an example and explain what will happen if homeostasis fails. [2+2+2 marks]
- (b) (i) Sketch and discuss the structure of the human cell membrane. [4+3 marks]
- (ii) Discuss, with examples, the permeability of the cell membrane to molecules that are water and lipid soluble. [2+2 marks]
- (c) Explain the function of the following organelles found within cells :
- (i) Smooth and rough endoplasmic reticulum, [4 marks]
 - (ii) Mitochondrion and [2 marks]
 - (iii) The Golgi apparatus. [2 marks]

Question 2

- (a) Name and explain the three fundamental physiological characteristics of nerve cells. [2 × 3 marks]
- (b) What are proprioceptions? Where are the proprioceptors located? [2+2 marks]
- (c) What are nociceptors? Where are these sensory receptors located? [2+2 marks]
- (d) Sketch and explain the neural pathway involved in the detection of a stimulus and the motor reaction. [5 + 6 marks]

Continued...

Question 3

- (a) What is blood plasma and blood serum? [2+2 marks]
- (b) Discuss the types and function of the following blood components: Erythrocytes, Leucocytes and blood platelets. [3+9+3 marks]
- (c) Sketch a diagram to show the flow of blood from the heart, lungs and the body. In another diagram, indicate and explain the flow, chambers and valves within the heart. [2+4 marks]

Question 4

- (a) List five functions of the kidney in humans. [10 marks]
- (b) Sketch and label five important structures of a nephron located in the kidney. [10 marks]
- (c) What is glomerular filtration? What physiological process including transport mechanisms takes place in the tubules of the nephron? [2+3 marks]

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